

seem so conducive to its extraordinary urban success. The species began to draw attention as an urban nester in the mid- and late-1970s because of its diving at humans. Since then kites have become recognized as common in scores of towns of all sizes in four states. Urban densities are high and roosts often exceed 50 birds. Parks, residence and school yards, and golf courses are prime sites of diving incidents. Comparisons of urban versus rural colonies indicate urban populations are probably more successful in key ways. Since about 1980 several state and private agencies and individuals have cooperated in management and education programs in response to diving. Management has been successful, and the potential for public education about raptors and predation should be expanded. An associated project to transfer nestlings of diving adults to Tennessee for hack release into an endangered population continues.

AGE OF MALE, WEATHER CONDITIONS, AND ENVIRONMENTAL TYPE: MAIN FACTORS FOR TIMING OF BREEDING IN EUROPEAN SPARROWHAWKS

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There are 113 stable and 29 occasional nesting places of European sparrowhawks (*Accipiter nisus*) within the Prague central urban area of about 200 km². The number of breeding pairs fluctuates in the range of 60–90. Since 1985, the maximum number of breeders have been banded and marked and the maximum number of fledglings have been banded. Birds living within the central (urban) area reveal different breeding data, age structures, fidelity and especially the timing of breeding, than those living in suburban or rural sites. During the study, we collected 540 male/nest/year observations of 325 banded and tagged males. One hundred and four of the birds were banded as nestlings. Analyses show that the age of males is crucial for the timing of nesting. The older birds tend to breed earlier in the year. If we take nesting time for adult males only, then the fluctuation from year to year will be largely determined by annual differences in suitability of the weather in winter and early spring. The relationship between mild winters and early nesting times during 1988–90 and the differences between urban and rural timing of nesting are evident from the data. Urban conditions tend to result in earlier breeding and to eliminate weather effects.

DIURNAL RAPTOR SPECIES OCCURRENCE AND DISTRIBUTION IN THE SEVERELY ALTERED LANDSCAPE AT ROCKY MOUNTAIN ARSENAL, COLORADO

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Rocky Mountain Arsenal (RMA) is a major superfund

site surrounded by urban and agricultural lands near Denver. The 70-km² site has recently been designated a national wildlife refuge, pending extensive contamination cleanup. As part of a broad study of the effects of human activity on wildlife at RMA, we began conducting bi-weekly roadside surveys of diurnal raptors in 1991, noting position of birds in relation to landscape features and human activities. We recorded a total of 14 diurnal raptor species. American kestrel (*Falco sparverius*), Swainson's hawks (*Buteo swainsoni*), and red-tailed hawks (*B. jamaicensis*) were the most frequently observed raptors in summer months, and ferruginous hawks (*B. regalis*), red-tailed hawks, and bald eagles (*Haliaeetus leucocephalus*) were the most frequently observed raptors during winter. Log-linear analyses indicate that different species responded differently to landscape features and human activities, and that the response of some species varied with season. The results provide guidance in designing future landscape alterations and human activity schedules to minimize negative impact on raptors during contamination cleanup at RMA and similar sites.

RESPONSE OF THREE RAPTORS TO HUMAN ACTIVITIES IN MEXICO

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A great many raptors have been affected by human activities in several ways. However, some raptors have also benefited from human activities. In México, the common black-hawk (*Buteogallus anthracinus*) apparently has increased its breeding densities in the Rio Bavispe, Sonora, as a result of the increase in the extent of the riparian woodland due to the upstream construction and operation of the Angostura Reservoir. The crested caracara (*Polyborus plancus*) and the turkey vulture (*Cathartes aura*) have been closely associated to old garbage sites and hen houses in Baja California Sur and turkey vultures usually roost in palms of the city of La Paz and Los Cabos. However, changes in the management of garbage and chicken carcasses, tourism developments, urbanism and agriculture are changing the longtime stable relationships between men and raptors in Baja. All these three examples show that some raptors are capable of evolving together with moderate human activities because they can be benefited from habitat changes that produce suitable nest-sites and/or increase food availability.

RELATIVE ABUNDANCE OF NORTHERN HARRIERS AND ASSOCIATED RAPTORS USING STRIP-MINE AND AGRICULTURAL HABITATS IN PENNSYLVANIA

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